The Influence of It on The Development of Contemporary Competences of Public Sector Employees in Bih in a Changing Working Environment

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ABSTRACT

In the business world of today, most activities are connected to informational technologies. They enable and facilitate business, but with action and adequate use of these technologies by people. Nowadays, we increasingly talk about the ability to adapt to changes in the working environment and the use of human capital.

One of the most important requirements placed before business organizations are the capability to manage information technologies. It includes the entire package of knowledge, skills, and abilities of employees in organizations, in order to master the requirements of changeable information technology and complete the goals of its organization. Basically, it includes informational technologies, i.e., digital competences connected with lifelong learning, and adaptation of employees and their organizations to novelties that informational technologies continuously bring.

As one of the contemporary scientific approaches, this paper uses the indicators of adaptation to changes in the business environment, i.e., human capital subject to continuous learning and informational technologies, the process of adaptation to changes, which turns the crucial business competences into contemporary ones. Mutual connection of these parameters in business concept has shown openness of organizations to contemporary business and work. Although the sample of research in this paper included public institution, not companies, the research itself is of great importance, given that there have been no similar approaches in Bosnia and Herzegovina so far. The research, through surveys of government officers, has shown that the influence of informational technology on the working environment and business organization in which government officers work is evident, as well as that the environment needs contemporary competences that include a set of digital competences, continual learning, and numerous other elements in business.

The conclusions of this paper are shown that is necessary for continual monitoring and specialization of government officers in the area of use of informational technologies in everyday business. The recommendations round out the process of contemporary approach and future comparison; in order to realize business results in their organizations due to certain competences.

Keywords: informational technology, digital competences, lifelong learning, working environment, business organizations, business, adaptation, public institutions, government officers.

I. INTRODUCTION

In the last few years, a lot of attention has been paid to information technologies. In the business world, most activities are related to them. They enable and facilitate business operations, but on the other hand, business performance becomes increasingly dependent on the proper use of these technologies and the people who use them.

Technology permeates all aspects of modern life, transforming the way we live, communicate and work. Since information technology produces promises and potential, as well as uncertainty and risk, we have to critically assess how technological advances shape society.

One of the most important requirements set before a business organization is its ability to manage it. It covers the entire package of knowledge, skills and capabilities that employees in organizations have in order to manage it requests and meet the goals of their organization. Basically, it covers IT or digital competences related to lifelong learning and the adjustment of employees and their organizations to the novelties continuously brought with it.

Through the entire package of knowledge and strategies, set since 1994, the European Union has defined digital competences that are essential for life in a changing environment. In 1998, the Green paper was published, highlighting the development of information technology and
providing a co-ordination approach to the information society.

Information technologies can positively contribute to the development of the economy, society, personal quality of life, as explained in the new set of European Union priorities called I 2010. This set of priorities in a broader sense implies strengthening and developing information technologies and IT society as well as investing in innovation for growth, development and employment, which also means training people to manage information technologies. The ability of people to use these technologies in business organizations significantly affects realisation of the company's goals, quick and efficient problem solving, user satisfaction, while on the other hand they can result in poor publicity, employee morale and poor organisation reputation (Marcus & Stern, 2003). The situation in the state sector is particularly complex, in which new demands for employees are set up by the introduction of new IT programmes (e.g., e-government, Lotus etc.).

The inability of government employees to manage applications on new IT programmes can have great consequences for the civil service, the network of other state institutions, as well as citizens. One of them is: inability to operate on documents in Lotus, which contributes to the fact that important documents and legal laws cannot be received by another service that prepares them for the government or even the assembly, which citizens await with impatience. In this case, the document is left for another meeting, which may last up to several months. The problem of network unavailability, technical non-adjustment of document to IT programme etc. can also arise here, which unskilled workers cannot solve. This problem can lead to damage of several million marks due to a delay in approving a law.

On the other hand, information literacy in the state sector is not regulated according to international regulations (ECDL, etc.) nor according to domestic regulations, which sets additional requirements for investments in maintenance of an IT system. Bill Gates (2011) says the job is becoming innovative with information technology and it is unthinkable to think understandable in the business world today without it. This is certainly prescribed by international educational standards, among which are:

- Continuous professional development; capacity development through formal and validated learning programmes sometimes referred to as continuous professional education.
- Information technology; IT management processes, human resources and skills that require application and products and processes in the task of IT production and development of IT systems, management and control.
- Learning can be achieved through processes such as: daily work experience, reading publications, observation, thinking etc.

Component business and organisational knowledge should include the following areas: economics, business environment, cooperative management, business ethics, financial market, quantitative methods, organizational behaviour, management and decision making, marketing, international business and globalisation. On the other hand, IT component should include general IT knowledge, IT control, user competencies in IT and one mixed role. The IT knowledge component can be provided in various ways, through curricula or through integration and connection with business knowledge. It can also be gained through working experience.

One of the main components here is the lifelong learning, promoting the importance of continuous improvement and lifelong learning.

Prominent standards are also in line with BiH standards, but rarely implemented. Quality of usage of capabilities and knowledge of management of some IT programmes as a parameter affects productivity of a certain business organization.

There are a large number of companies on the market that offer maintenance of certain solutions. These companies have quality personnel that possess knowledge, skills and competences for managing various IT solutions. In this regard, they are competitive on the market and therefore have the power over the availability of software systems.

Competent people in IT sector are greatly lacking civil services. As a result, the problems are evident in the areas of information security, business management or adequate management of information system. Lifelong learning and training, especially in the field of information technology, give employees in any labour sector the opportunity to acquire the necessary competences to work on basic computer applications. This includes the use of Windows, Word, Excel, Outlook, Internet and advanced internet use. All these possibilities of knowledge upgrading undoubtedly contribute to the improvement of the work of the civil service, but cannot be critically mapped without taking into account the specificities of the organisation to which they apply. On the other hand, an adequate analysis of organizational needs and the selection and implementation of appropriate technical and organizational solutions can result in significant results in educating people in civil services. Unfortunately, in order to ensure quality people for managing IT programmes, restrictions that are usually set on the principle of investment must also be taken into account, such as: will the employee agree to new education, will he or she be able to use new skills in working environment, etc. The restriction represents another factor: a post or a position in the civil service. If an individual is a collaborator with medium-sized expertise whose scope of work does not include the use of Excel, then he/she thinks that no knowledge of Excel or other Windows applications should be needed.

Here we are going back to European Union regulations and documents which state that all people need to master with basic knowledge of computer management and Windows applications and be ready to adapt in a changing working environment. This is exactly the topic of this paper.

II. CONTEMPORARY COMPETENCES

The use of multimedia technology in the business world is one of the factors for successful business operations. Not only does almost every company in Europe, including Bosnia and Herzegovina, have its own website, sometimes a forum for exchanging opinions, but also an email is used as an integral part of everyday business communication. This allows people
to communicate in a simple and universal way all over the world. So, one of the factors that permeate through the spheres of social, political, cultural, economic, working, as well as personal life is the influence of information technology and the ability to govern digital literacy.

Anticipating the need for flexible education that can respond to the needs of society and business organizations as a whole, the European Union has developed key competences that are considered a basic precondition for meeting both individual and business activities. The basic competencies include information-communication or digital competencies. Digital competences are one of the most sought-after skills and include, among other aspects, the use of technological, information, multimedia or communication skills and knowledge. They also include the safe and critical use of electronic media in business, free time and communication. These competencies are related to logical and critical opinion, high level of information management and well-developed communication skills. At the basic level, information and communication skills include the use of multimedia technology in order to acquire, assess, store, produce, present and exchange information and to communicate and participate in networks online.

Under the influence of IT and the adaptation of business organizations to changes, employees' digital competences reshaping into contemporary skills, the so-called New skills for New jobs. Contemporary skills and competences are key to social mobility, work, active citizenship and professional development (EU COM, 2008). There is also mention of competitiveness which is contributed through capable employees who possess contemporary competencies.

Competitiveness, apart from institutional indicators, macroeconomic indicators, is measured by education, employee education, their competences, technological competences in a business organization, etc.

The concept of competitiveness refers to rivalry or the tendering process in order to achieve the best possible result (Obadic, Dragicevic 2013). Development of information and communication technologies affects the productivity of countries in many ways, and the authors of Castells et al. (2011) point out that the impact of globalisation is a factor that has led to a greater dependence on information and communication technologies. With global competition arising, business organisations need to find a model to maintain their competitive edge. The most successful are those who have quick access to information and those who have capable people in their teams, ready for education and acquiring contemporary competences.

The conscientious competencies author Suzic (2014) also refer as the competencies of the future. This is actually a contemporary approach to business organizations and business operations. The author said that conscientious, i.e. the competencies of the future are a condition for survival in a business organization. In the mosaic of competences he highlights four main spheres: cognitive, emotional, social and work in action. To be successful in the knowledge economy, an individual must have all these spheres active. The working-action sphere is a “humane-Mass” competence that includes a combination of its own capabilities, technology, it use, machines and expert intelligence.

Projecting these competencies, the future business organizations can have quality individuals, ready to adapt to the changes.

Based on these settings, as well as on the analysis of previous research, it can be concluded that no research has been conducted so far to analyse the impact of the use of information and communication technologies on the contemporary competence of employees, especially in civil services in BiH. Therefore, based on the above mentioned description and primary results, conclusions will be drawn and the explained in this paper.

III. PUBLIC ADMINISTRATION AND IT

A. Overview on the State of Information Technology in the Government Sector

The use of information technology in state institutions in Bosnia and Herzegovina is still insufficiently used. According to the 2010 ACIPS Report (Association of Alumni Centre for Interdisciplinary Postgraduate studies), which identifies the most relevant issues in European integration processes and challenges facing BiH today, the key conclusions are as follows:

- the existing institutional and legal framework does not have the capacity to meet the actual needs for administrative education and training, which, given the context of public administration reform, must be considered a strategic mistake!
- the Strategy for public Administration Reform in Bosnia-Herzegovina (RJU Strategy) and Action Plan 1 provides a number of measures that deal with the improvement of administrative education and training, but it is important to note that these are still measures whose implementation is expected only within the framework of the reform, and not in the period of preparation for key reform projects. In other words, public administration reform started without adequate preparation for education and training of its key actors.
- no public administration, can afford the luxury of not understanding globalization and neglecting technological progress. Civil servants who do not rule foreign languages and do not use contemporary information and communication applications are the most exquisite example of public administrations losing their battle with a progress. For illustration, according to reports by civil service agencies at different administrative levels, learning foreign languages and computer training remain the most required forms of training for BiH administration.
- the aggregate progress for all administrative levels of government combined (BiH, FBiH, RS and BD) according to the information technology reform in the public administration is 28.72% (0.88%).

This report supports the fact that the process of public administration reform in the field of information technologies is proceeding slowly, and that changes in this field are inevitable and necessary.

The EU’s progress report on Bosnia and Herzegovina in 2014 noted the following:
as regards to electronic communications and information and communication technologies, there is no further development in the harmonisation of legislation. The BiH Council of Ministers has not yet adopted and updated action plan for digitalisation. No decision has been made yet to use to the digital dividend.

regarding to information Society services, the State Act on the Agency for the Development of information Society has not yet been adopted. Regulations on electronic documents at the state level have not yet been adopted. There was no harmonisation with the electronic business Directive, or with implementing regulations in the field of public access services. The electronic business Act and the electronic signature Act were not implemented at the state level because there is no supervisory authority for accreditation. BiH's Transport and Communications Ministry's administrative capacity remains insufficient.

monitoring is prohibited pursuant to the Communications Act of Bosnia and Herzegovina, and it is dealt with by the Communications regulatory Agency.

Overall, progress in the field of information society and media is limited. Significant efforts should be made to develop electronic communications and information society.

This is another indicator that the information society has not been sufficiently developed in Bosnia and Herzegovina. Through the same document it can be noticed that information system such as agricultural and river system is not developed and is necessary for the development of agriculture.

Although many institutions in Bosnia and Herzegovina have embarked on information technology reform, according to the European Commission, this is still not at an adequate level in comparison with EU countries. In order to realize how open civil servants are to the use of information technology, as well as the use of basic applications on the computer, this will be demonstrated by the analysis of research.

IV. RESEARCH, METHODOLOGY AND RESULTS

The aim of the research is to determine the extent to which information technologies influence on the development of contemporary competencies of employees in the state sector, who work in a changing working environment.

An important segment in the research is a correlation between information technologies and digital competences that are necessary for work in a business environment that is constantly changed. Furthermore, the paper will provide an insight into the existence of digital competencies among employees in state organizations, which are prescribed in the EU working document for the XXI century. In addition, one of the objectives that will be presented through this paper is the identification of the gap between current competencies of employees in the state sector and those necessary for work in a state institution.

The necessary competencies are those defined and described in the theoretical part of this doctoral dissertation and correspond to the needs of a changing working environment.

The influence of information technology on all spheres of life is evident, including on the working environment. The requirements of the working organization are put before each individual and are caused by innovations; fast pace of life, new and contemporary information technologies. The necessary knowledge, skills and capabilities necessary to work in each company are prescribed by the key competencies and their upgrading, thus moving to the contemporary or new competencies, including digital competencies which are the basis for using computers and operating information.

Adapting to constant changes in the environment, including in the workplace, requires continuous and lifelong learning. Workplace and learning are no longer two separate components, but represent a connection and generalisation of one.

The more information technologies affect a certain business organization, the bigger is the gap between what today's employees know and what they should know in the future. The possibility of adapting employees to the workplace and information technologies, as well as openness to learning results in acquiring modern competencies today. Highly educated employees in general in the public administration can be of great benefit to the productivity of the business organisation itself. Continuous professional development and acquisition of digital competences can be a win-win situation for state employees, their associates and citizens. Advantages of such a strategy are different, from productivity of work in the state sector, fast performance of work, case resolution, creation of free time for realization of new ideas and projects, etc.

Also, the analysis of the results that follows in this section could help the state institutions to adopt better training strategies and education of civil servants and employees in the field of information technology, as well as in other international organizations to continuously propose and develop projects and models for education of employees in civil services.

A. An overview of Research Questions

From the questions formulated in the research, it is necessary to emphasized that the influence of information technology is one of the factors of changes occurring in working organizations and that it is necessary to continuously learn to use it.

Presented and prescribed key competences of the working document of the European Union, it has proven that digital competences are among the key competences identified. Other EU documents, as well as the New skills for New jobs publication, explained that key competencies need to be upgraded and adapted to the business environment in order to become new competencies which include, among other things, IT use, adaptation to changes, etc.

Analysis of remaining research issues, of which the following are:
- Do information technologies influence on the development of contemporary competencies of employees in the state sector?
- Do civil servants and digital competences have the capacity to work in a changing working environment?
- Are the competencies of civil servants in direct relation to the achievement of key goals of organizations, including maintaining competitive advantages in the labour market and adapting to IT changes?
- Do digital competences of employees differ according to the professions and type of work they perform in civil services?

The results will be interpreted further in the paper, through the presentation of the survey results, as well as through the detailed analysis.

B. Methods Used in the Research

Methods used in the research are presented as it follows:
- a descriptive method aimed at describing certain terms and changes, starting with the basic concepts such as: contemporary business competencies, information technologies, changing working environment, etc.,
- case study method in which different types of information are presented,
- comparative method with the aim of comparing different phenomena and processes, as well as comparison of similarities and differences of employees in civil services, their expertise in performing activities related to information technologies, depending on age, occupations, and types of work they perform during operations on certain computer applications. This method will provide a clearer insight into the extent to which state employees possess.
- In addition to these methods, statistics were used, followed by the factor analysis with the purpose of analysing intercorrelations within the analysed variables and their interconnections, as well as generating information in order to better understand relations between variables and identify dimensions that cannot be immediately observed.
- Skills gap analysis was also used in other methods in order to gain insight into those competencies that are non-existent and
- ALM model as theoretical approach, like framework of understanding of how IT influence on the workplace of employees, and which is also based on skills and competencies that employees should have in certain business organizations.

C. The Research Instrument

The instrument designed for the purpose of this research is the evaluation scale. By assessing the best response, respondents gave their opinions on the working organisation, i.e., the state institution in which they work and the changes in which they are subject of research, than about information technology learning and digital competences prescribed by the EU working document for the XXI century, as well as about “New skills for New job” contemporary competences (based key competences capacity of lifelong learning adaptations to changes in IT use) issued by the European Commission.

The scale was compiled from three parts. At the beginning, the respondents entered the age, education, occupation, and the type of work they perform, as well as the name of the institution in which they work.

1. In the first part of the survey, respondents gave opinions on the working environment, changes to which their work institution is subject, the impact of information technology on the work organisation, as well as on the representation and usefulness of information technologies on the work environment in which they perform their work activities. The offered claims consist of: never, rarely, sometimes and frequently, and are marked as 1-never, 2-rarely, 3-sometimes and 4-often.

2. The second part of the survey consist the questions about the use of information technology related to learning, through which respondents expressed their opinions on how much they learn in order to survive in the business world, marked by constant changes, how much they are ready for changes regarding information technologies, how much learning about the use of information technologies requires the time and effort from them, how much they are ready to learn again in order to adapt to changes in their institutions, etc. Also, as in the first part of the survey, the proposed claims are: 1-never, 2-rarely, 3-sometimes and 4-often.

3. On the third part of the survey, questions related to digital competences prescribed in the EU working document for the XXI century are presented, and they relate to the knowledge, skills, and attitudes necessary for conducting digital operations. The employees expressed opinions about computer applications that they operate during their work activities, about the knowledge they possess within the framework, about individual applications such as Windows, Word, Excel, as well as power point presentations they use in the workplace, archiving and managing files and folders, as well as search and find information. Within this part of the survey, the offered response scale ranges from 1 indicating a low level of knowledge, 3 - mean level of knowledge and 5 indicating a high level of knowledge for certain offered applications. It is only necessary to note here that the respondents used instructions during the survey explaining how to fill in the questionnaire and did not need additional explanations.

D. Description of the Structure of Sample

The survey was conducted on a representative sample of employees of different profiles from Bosnia and Herzegovina, in the public administration and state institutions in four cities, namely: Sarajevo, Tuzla, Banja Luka and Mostar.

In each city, the survey covered 75 employees from the state sector, a total sample of 300 individuals.

State institutions surveyed are ministries, such as: Ministry of Education and Culture Banja Luka, Ministry of Internal Affairs Mostar, Ministry of Labour and Social Policy of Canton Sarajevo, Ministry of Construction Tuzla and other ministries as well as professional services with governments in mentioned towns that were interested in contributing and participating in the research. It is also necessary to mention

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that different profiles of employees, age, occupations and functions in ministries participated in the survey.

E. Findings

The structure of sample in the findings is presented as it follows:

- C. Sarajevo; age range 26–57 years, qualifications: from highschool diploma to master diploma
- Tuzla; age range between 25-63, and mostly persons with finished 4 years faculty.
- Mostar; age range between 24-62, and mostly persons with finished 4 years faculty.
- B. Luka age range between 23-66, and mostly persons with finished 4 years faculty.

F. Analysis and Interpretation of Survey Results

Descriptive analysis of the first part of the survey — working environment:

- In the first part of the survey, which refers to the working environment and changes occurring in the working organisation, seven of the following questions were offered:
  1. Is your work organization subject to change?
  2. Does the changing working environment affect to work in your organization?
  3. Do you consider IT influence under a changing working environment?
  4. How much information technology is presented in your working environment?
  5. How useful is IT to work for you?
  6. Does IT help you to fulfil certain business tasks?
  7. Are you open to innovations that bring IT to a changing environment?

Subjects were able to provide the following answers:

1. never
2. rare
3. sometimes
4. very often

To the first question concerning how much the organisation is subject to change, out of 300 respondents in Sarajevo, Mostar, Tuzla and Banja Luka, 221 state employees responded with sometimes and often, while 79 respondents responded with never and rarely. An interesting fact is that 299 respondents, to the first question answered often and sometimes. Only one subject (lawyer, from Sarajevo, 29 years of age, male sex) gave a response-rarely. We can speculate whether this examinee already possesses, by profession, excellent knowledge related to information technologies or has a natural gift for them, whereby he works easily on various applications without previously needed and established knowledge.

The second question concerning continuous learning provided the following answers:

- Very often: 186 subjects
- Sometimes: 96 respondents
- Rare: 17 subjects
- Never: 1 subject

Therefore, when it is asked whether it is necessary to study continuously in order to be qualified to work in the organization, most respondents gave a confirmatory answer. Out of a total of 300, 186 respondents responded frequently. The respondent who stands out of the whole group answered never. Here we can assume that this is a mistake, that the respondent responded quickly to the question, did not understand it or that it is not necessary to learn continuously for the job he is working on. The interviewee with secondary education is 52 years old, from Sarajevo.

When it is asked if you need more time to learn how to use IT, the following answers were obtained:

- Very often: 82 subjects
- Sometimes: 146 respondents
- Rare: 66 subjects
- Never: 6 subjects.

H. Factor Analysis

The factor analysis extracted two characteristic root, significant factors. Factor 1 with characteristic root value 9.91 which explains 58.3% of variance and factor 2, which with far less value of 1.56 explains much less variance, only 8.6%. Factor 1 is moving far away from other factors in the percentage of explained variance, and factor 2 is closer to other, insignificant factors than factor 1. In this case it is justifiable to conclude that the latent structure of this questionnaire is unique, i.e. one latent variable lies in the background of the question. In the area of digital competencies, the most issues are related significantly (the value of the saturation coefficient is above 0.30) only to factor 1, and several to factor 1, but also to factor 2. In order to create a pure unifactor questionnaire, the following questions are excluded from processing: If you have a basic knowledge about the processing of text, if you think that cultural diversity is not an obstacle to the use of the internet, are you interested in using a wide web network through which you would contribute to the cultural, social and professional development and do you have the necessary knowledge for the use of social. The dependent variable of digital competence in the continuation of data processing was created based on the questionnaire.

I. Regression Coefficient

A statistically significant regression coefficient (R = 0.56; F = 22.11; p < 0.01) was obtained which shows that the
predictors used clearly explain the variance of the dependent variable significantly. Predictors have proven to be statistically significant, according to their impact size: Age in the negative direction (beta = -0.49; t = -9.74; p < 0.01), working environment in the positive direction (beta = 0.18; t = 3.48; p < 0.01) and structural readiness in the positive direction (beta = 0.14; t = 2.77; p > 0.05).

Therefore, we can conclude that the younger the examinee is, the more changing his working environment is and the more professional he prepares, the higher the level of development of his digital competence is.

In order to see what digital competencies examinees have and what kind are missing, gap skills analysis is used in this research.

J. GAP Skills Analysis

GAP skills analysis used in this section identifies the gap between competencies of civil sector employees that exist and are missing and includes previous stages of the same analysis: identification, documentation, analysis, and presentation of the real situation. This analysis can be carried out at any level of the organisation, e.g. to identify strategic plans and programmes to increase employee performance in a given field of action and work.

Therefore, the third part of the survey relating to digital competences was used for gap skills analysis. The survey answers are marked with a scale of 1 to 5, with number 1 indicating the low performance and number 5 indicating the high level of performance or competence that employees possess. Seventeen questions from this part of the survey are identified, consisting of the following:

1. Do you know the basic components of the computer?
2. Do you know how to use basic applications: Word, Excel?
3. Are you capable of managing files and folders?
4. Can you open a memory (CD, DVD, USB)?
5. Are you capable of storing files (USB, CD...)?
6. Do you have a basic knowledge of text processing?
7. Do you know the basics of the Internet and search for information?
8. Are you capable of finding a website on the Internet?
9. Do you have the basic knowledge for using an email?
10. Do you have the knowledge to use apps for tabulation and calculation?
11. Do you have the knowledge to make a PowerPoint presentation?
12. Are you inclined to use IT for an individual work in your organization?
13. Are you inclined to use IT for a team work in your work organization?
14. Are you sensitive to the use and copying of private documents from the Internet?
15. Do you think that cultural diversity is not an obstacle to Internet use?
16. Are you interested in using a wide internet network to contribute to cultural, social and professional development?
17. Do you have the needed knowledge to use a social network?

Deviations are not so large. They usually range from 3% to 20% for complete upgrading or from 3% to 18% for partial upgrading of digital competencies. The presence of digital competencies and the certain deviations can be summarized as it follows:

- The greatest deviations are on knowledge relating to the production of power point presentations.
- The total of 34.67% of employees needs complete or partial training from this field, while 65.33% of employees already have one.
- Furthermore, knowledge relating to the use of applications for tabular calculation and display, such as Excel, requires 21.67% of employees to be trained completely or partially.
- The knowledge for the use of social networks is possessed by 78% of employees, while training is required for 22% of them.

It is evident that a lower level of knowledge of employees in the field of power point presentation production is presented, and lower level of knowledge for usage of social networks, but also a sensitivity to usage and copying of private things from the Internet was noticed. It is possible that this last item is due to the fact that the Copyright Act, adopted in the Chamber of Deputies of the Parliamentary Assembly of Bosnia and Herzegovina 30. 6. 2010, has never fully applied nor explained related to text and other records that can be found online. More attention must be paid to this issue by authorities and experts in the field of law and information technologies in Bosnia and Herzegovina, who would make recommendations for mentioning the type of this problem. The result related to the copying of documents from the Internet can serve as one type of recommendation for further solving the same problem or initiating a project and program for sensitivity to the use of other people's documents as audio and video on the Internet.

Therefore, based on GAP skills analysis, it is presented the lack of skills and competences of employees in the state sector. On the basis of this analysis, the skills necessary to improve, completely or partially, as well as those necessary to perform regular work in state units, such as knowledge of basic components of computers, skills and knowledge for managing basic applications such as Word, Excel, maps and folds, etc., are presented. Although deviations range between 19% and 30%, these daily operations must be fully improved and are necessary for performing effective work.

V. CONCLUSION

Learning is an essential part of everyday life. Previously, it was part of everyday activities, just like today it is part of the life of modernism.

Today, learning has gained significance, not only in the European Union, Bosnia and Herzegovina, but also all over the world. A special emphasis is placed on the influence of new technologies and technological innovations that require a multitude of competencies, and which at the same time give learning a new accent. In this way, learning gets a new meaning today: lifelong learning and continuous learning, learning which stretches its roots still, regardless of space and time, even at and outside the workplace.
Many things has changed, time and people, so learning, information technology and work are factors in the time, and human capital is the main factor in it. Now, the demands of changes brought about by today's world, as well as the demands of social capital at a much higher level, have caused that there is no restriction on workplace learning, but also underlines and supports it.

Managing organisational changes with the impact of learning is a challenge that managers of different organizations and heads of state institutions meet today. Application of information technology in the workplace and operation with various applications is an indispensable part of everyday work activities. Linking material and human capacities in organizations and institutions today, as well as other functions, is a success that leads to previously achieved economic and strategic goals.

Mutual organization of internal factors in institutions is necessary because their resources are put at the disposal of the organization, both materially and technologically, as well as human resources. That is why today there is more and more talk about organizations that learn or so-called teaching organizations.

The permanent need of today's society as a whole is lifelong learning. For an organization to have the characteristics of a modern organisation, a combination of all factors in the business is necessary. Organizational learning is one of the elements of business that enables organizations to learn, accumulate knowledge, combine it with experience, apply it and be prepared for further training. This also means that former key competences of workers become contemporary, which can significantly contribute to the creation of a strategic advantage.

Research conducted at state institutions in Sarajevo, Mostar, Tuzla and Banja Luka indicates that organizations in most cases follow the professional development of employees, although there are deviations from individual subjects, and this may be due to the lack of interest or lack of motivation. In addition, it is important to emphasize that state institutions are organizations that learn. As a result of organizational learning, they understand changes that information technology brings with them and adapt effectively to them. It can be said that these state institutions use organizational learning as a way of managing change, because their employees, aged 20 to 67, are ready for continuous learning, which is an instrument that under certain conditions, and innovations can bring to a changing working environment, and can help the organisation to develop and achieve its goals, as it is the case here. However, these factors are not the only factors of the learning organisation. The valuation of participating organisations is not only stopped on human capital; it is also necessary for: organizational culture where ideas and innovations are appreciated, where employees expand their knowledge regardless of the competences they need for work, development of information systems and technologies where all databases are connected, learning through community, measurement and evaluation of results and a multitude of other elements. Therefore, it is absurd to think that it is possible to achieve any competition on the international level without a quality and efficient educational system in the state institutions, which will continuously train people, particularly in the field of information technologies, for a modern labor market. It is necessary to enable all employees the certain conditions for acquiring knowledge, which represent a requirement of a changing working environment, through some organisations or by employing professional associates to learn at work. Short-term solutions do not lie in the occasional participation in seminars, but in the training and continuous learning of the currently existing staff in institutions.

Educational programmes for acquiring special contemporary competencies should be implemented through all working organizations in order to enable professional training and improvement of business operations. This particularly refers to the development of information technology and the use of digital competences in the business, which should be well-established, as well as, on the other hand, the knowledge and skills necessary to meet business needs.

In this way, every employee could say that she/he possesses knowledge, abilities, skills and attitudes of good operation with digital competences and the use of information technology, the ability to adapt to changes in the working environment, as well as the ability of lifelong learning – all that consist contemporary competencies. It is also important to mention the ability to develop socially, culturally and professionally online, to which state employees seem not to be used, as well as the attitude towards copying private things online. These competencies are part of everyday life of business organizations in the world. It looks like institutions in Bosnia and Herzegovina are still not used to these competencies in the full sense of the word.

It is necessary to point out that through this work all personal acquired knowledge and experience have been accumulated, which has contributed a great deal to creating a clear picture of the importance of information technology in the working environment, and what competencies should be possessed by every employee in the state or other institutions. Although the paper deals with civil servants, the experience gained, knowledge and research can easily be transferred to any other business organisation, in order to develop a strategy for the creation of a teaching organisation.

As mentioned earlier, contemporary competencies gained and perfected through lifelong learning in the workplace, under the influence of information technology and adaptation to changes, have recently become increasingly popular. Therefore, in the future, the emergence of new staff with strong social, economic and technical knowledge is imminent, which will strive to build its own profiles and compete, not only in a certain state institution in Bosnia-Herzegovina, but also on the international market.

Although state institutions have a certain employee profile with their advantages and disadvantages, they deserve to be able to face challenges that bring about changes under the influence of information technologies. This also means good management of managers in state institutions who will establish an efficient educational organization of work with the aim of increasing performance and better training in a modern working environment.

The research conducted at the state institutions in Sarajevo, Mostar, Tuzla and Banja Luka justified the hypotheses and proved that the influence of information and communication technologies on the development of contemporary
competencies of civil servants in a changing working environment is evident and that they are necessary to achieve the key goals of their organizations, including adapting to information and technological changes.

Applying the concept of modern organizations, in which the contemporary competencies of the employees in the learning organisation play a key role, the organisation acquires a real human capital that represents wealth of business and aspires to meet business goals and client satisfaction.

I would substantiate the final consideration with Peter M. Senge's words:

“People don’t resist change. They resist being changed! ....One basic way to expand our efficacy is through modern science and technology. But another is through integrated (emotional, mental, physical, and spiritual) growth and enhanced wisdom. This means growing in our sense of connection with nature and with another learning to live in ways that naturally cultivate our capacity to be human. If I learned anything ... it is the notion that we need to be working on all different parts of the system in order to successfully change the whole system.”

REFERENCES


ACIPS (2010). Procjena ostvarenog napretka u provođenju reforme javne uprave u Bosni i Hercegovini. Sarajevo, BiH.


Byrner, J. Reder, S. Parsons, S. and Strawn, C (2008). The digital divide: computer use, basic skills and employment, NR and DC.


Dryden, J. (2003). ICT, the economy and society – challenges of measures and analysis, OECD.


Holtzscheider, B. & Jaffe, B. (2012). IT managers handbook, 3e.Morgan Kaufman Publisher, USA.


Kyriazoglou, J. (2012). IT business alignment, part I, USA.


